BEST EVIDENCE TOPIC REPORTS

Towards evidence based emergency medicine: best BETs from the Manchester Royal Infirmary

Edited by K Mackway-Jones

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Best Evidence Topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but rather contain the best (highest level) evidence that can be practically obtained by busy practicing clinicians. The search strategies used to find the best evidence are reported in detail in order to allow clinicians to update searches whenever necessary. Each BET is based on a clinical scenario and ends with a clinical bottom line, which indicates, in the light of the evidence found, what the reporting clinician would do if faced with the same scenario again.

The BETs published below were first reported at the Critical Appraisal Journal Club at the Manchester Royal Infirmary[1] or placed on the BestBETs website. Each BET has been constructed in the four stages that have been described elsewhere.[2] The BETs shown here together with those published previously and those currently under construction can be seen at http://www.bestbets.org.[3] Three BETs are included in this issue of the journal.

- Gammahydroxybuyrate overdose and physostigmine
- Terlipressin or sclerotherapy for acute variceal bleeding?
- Full blood count and reticulocyte count in painful sickle crisis

Carley SD, Mackway-Jones K, Jones A, *et al*. Moving towards evidence based emergency medicine: use of a structured critical appraisal journal club. *J Accid Emerg Med* 1998;**15**:220–222.
Mackway-Jones K, Carley SD, Morton RJ, *et al*. The best evidence topic report: A modified CAT for summarising the available evidence in emergency medicine. *J Accid Emerg Med* 1998;**15**:222–226.
Mackway-Jones K, Carley SD. bestbets.org: Odds on favourite for evidence in emergency medicine reaches the worldwide web. *J Accid Emerg Med* 2000;**17**:235–6.

Gammahydroxybutyrate overdose and physostigmine

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Abstract
A short cut review was carried out to establish whether physostigmine has a role in the management of gammahydroxybutyrate (GHB) ingestion. 18 papers were found using the reported searches, of which one was a review that incorporated all other relevant papers. The author, date and country of publication, patient group studied, study type, relevant outcomes, results, and study weaknesses of this review are tabulated. It is concluded that the evidence for the use of physostigmine for the treatment of GHB ingestion is poor. Local advice should be followed.

Three part question

In [patients with gammahydroxybutyrate ingestion] does [treatment with physostigmine] [reduce the neccessity for intubation and duration of unconsciousness]?

Clinical scenario

A 25 year old man is brought to the emergency department after collapsing in a club. His friends report ingestion of Gammahydroxybutyrate (GHB) and alcohol. His Glasgow Coma Scale score is 3 on arrival and he is intermittently apnoeic. When you attempt to intubate him he seems to rouse but quickly becomes unresponsive again once you stop. You ask for anaesthetic help. The anaesthetic registrar has a similar experience on attempting intubation. You are sure you have read that physostigmine can be used to avoid intubation in this situation. You wonder if you have remembered correctly.

Search strategy

MEDLINE using the OVID interface 1966 to January Week 1 2006

Embase using the OVID interface 1980 to 2006 Week 02

[exp Hydroxybutyrates/OR GHB.mp OR gammahydroxybutyrate.mp.] AND [physostigmine.mp. or exp Physostigmine/] Limit to Humans and English Language

The Cochrane Library Issue 4 2005

[Hydroxybutyrates {MeSH explode all trees} OR gammahydroxybutyrate {all fields}] AND [physostigmine {MeSH explode all trees}].

Search outcome

18 papers were found of which one was a systematic review. All other relevant papers were included in the review.

Comment(s)

As noted in the review by Traub *et al*, the evidence for and against the use of physostigmine is of poor quality. Only two papers (involving six patients) are set in the emergency department, while those in the anaesthetic room are uncontrolled. This matters since the recovery from GHB induced anaesthesia is relatively rapid and it is therefore difficult to draw conclusions from uncontrolled studies.

► CLINICAL BOTTOM LINE

The evidence for the use of physostigmine is of low quality. Local advice should be followed.

Traub SJ, Nelson LS, Hoffman RS. Physostigmine as a treatment for Gamma Hydroxybutyrate Toxicity: A Review. *Journal of Toxicology - Clinical Toxicology* 2002;**40**(No 6):781–7.